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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/504,782	02/15/2000	Masahiro Kume	0819-337	8307
22204	7590	06/02/2005	EXAMINER	
NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128			FLORES RUIZ, DELMA R	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/504,782

Applicant(s)

KUME ET AL.

Examiner

Delma R. Flores Ruiz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 24, 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6, 25 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 3 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sverdlov (6,455,337) in view of SAKAI, SHIRO (JP 09232627).

***Regarding claims 1 – 3, and 24***, Sverdlov discloses a semiconductor laser device (see Fig. 1, Character 10) comprising; a first cladding (see Fig. 1, Character 16) layer, which is made of a nitride semiconductor of a first conductivity type (see Fig. 1, Character 18) and is formed over a substrate (see Fig. 1, Character 12); an active layer (see Fig. 1, Character 20), which is made of, which is made  $\text{In}_y\text{Ga}_{1-y}\text{N}$  layer and is formed over the first cladding layer; and a second cladding (see Fig. 1, Character 24) layer, which is made of still another nitride semiconductor of a second conductivity type (see Fig. 1, Character 22)

and is formed over the active layer (see Figs. 1 – 7, Abstract, Column 2, lines 43 – 67, Column 4, lines 11 – 65). The  $\text{In}_x\text{Ga}_{1-x}\text{N}$  layer and is formed is formed in contact with the first cladding layer and substrate (see Figs. 1 – 7, Abstract, Column 2, lines 43 – 67, Column 4, lines 11 – 65).

Sverdlov discloses the claimed invention except for  $\text{In}_x\text{Ga}_{1-x}\text{N}$  layer of the first conductivity type is formed between the substrate and the first cladding layer and  $x \geq y$  in the composition. SAKAI teaches providing his device with a wherein  $\text{In}_x\text{Ga}_{1-x}\text{N}$  layer of the first conductivity type is formed between the substrate and the first cladding layer and  $x \geq y$  in the composition on In with semiconductor device for the purpose of conductive a specific area and provided to easily grow an indium-containing compound layer like an  $\text{In}_x\text{Al}_y\text{Ga}_{1-x-y}\text{N}$  layer, by growing  $\text{In}_x\text{Ga}_{1-x}\text{N}$  as a buffer layer so that mole density of indium is easily increased or decreased. It would have been obvious at the time of applicant's invention, to combine SAKAI of teaching a  $\text{In}_x\text{Ga}_{1-x}\text{N}$  layer of the first conductivity type is formed between the substrate and the first cladding layer and  $x \geq y$  in the composition on In with semiconductor device because It would have been obvious to one having ordinary skill in the art at the time the invention was made to  $\text{In}_x\text{Ga}_{1-x}\text{N}$  layer of the first conductivity type is formed between the substrate and the first cladding layer and  $x \geq y$  in the composition on In (Abstract), since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

***Allowable Subject Matter***

The following is an examiner's statement of reasons for allowance: claim 4 has been allowed over the prior art because they fail to teach a semiconductor laser device comprising; a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over substrate; an active layer, which is made of  $\text{In}_y\text{Ga}_{1-y}\text{N}$  and is formed over the first cladding layer; a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active; an electrode formed over the second cladding layer, **and an  $\text{In}_x\text{Ga}_{1-x}\text{N}$  of the first conductivity type is formed between the second cladding layer and electrode, wherein  $0 < x < 1$ ,  $0 < y < 1$  and  $x > y$  in the composition of In.**

Claims 5 – 6 and 25 has been found allowable due to their dependency on claim 4.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reason for Allowance".

### ***Response to Arguments***

Applicant's arguments with respect to claims 1 - 6 and 24 – 25 have been considered but are moot in view of the new ground(s) of rejection. Applicants amendments raised new issues that made necessary the new art to be applied and therefore, the arguments presented against Sverdlov are said to be moot due to the new grounds of rejection. Applicant's amendments have been fully addressed by the above presented rejection

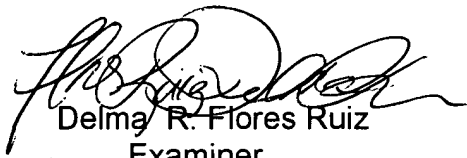
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) -272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available

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through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Delma R. Flores Ruiz  
Examiner  
Art Unit 2828



Min Sun Harvey  
Supervisor Patent Examiner  
Art Unit 2828

DRFR/MH'  
October 31, 2004